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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, SHUN K

ART UNIT	PAPER NUMBER
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2884

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,851

Applicant(s)

BERGH ET AL

Examiner

Shun Lee

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0204</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features (e.g., substrate, intermediate transparent organic film, stimuable phosphor layer, first transparent organic film, second transparent film, radiation image sensor, etc.) must be shown or the features canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because of the language. Correction is required. See MPEP § 608.01(b).
4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

5. Claims 1, 33-36, and 41-44 are objected to because of the following informalities:
- (a) in claim 1, "type" on line 10 and 11 should probably be deleted;
 - (b) in claim 33, "said needle-shaped stimuable phosphor layer" on lines 5-6 should probably be --said stimuable phosphor layer--;
 - (c) in claim 33, "type" on line 10 and 12 should probably be deleted;

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(d) in claim 34, "said needle-shaped stimuable phosphor layer" on lines 5-6 should probably be --said stimuable phosphor layer--;

(e) in claim 34, "type" on line 10 and 12 should probably be deleted;

(f) in claim 35, "said needle-shaped stimuable phosphor layer" on lines 5-6 should probably be --said stimuable phosphor layer--;

(g) in claim 35, "type" on line 10 and 12 should probably be deleted;

(h) in claim 36, "said needle-shaped stimuable phosphor layer" on lines 5-6 should probably be --said stimuable phosphor layer--;

(i) in claim 36, "type" on line 10 and 12 should probably be deleted;

(j) in claim 41, "type" on line 4 and 5 should probably be deleted;

(k) in claim 42, "type" on line 4 and 5 should probably be deleted;

(l) in claim 43, "type" on line 4 and 5 should probably be deleted; and

(m) in claim 44, "type" on line 4 and 5 should probably be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, and 44 are rejected under 35

U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites the limitation "said organic film" in line 2. The antecedent basis for this limitation in the claim is indefinite since both "a first transparent organic film" and "an intermediate transparent organic film" can be the antecedent basis for this limitation.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1, 5, 9, 13, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873).

In regard to claims **1, 5, 9, 13, 17, and 21**, Kano *et al.* disclose (Figs. 1 and 2) a radiation image sensor comprising:

(a) a stimuable phosphor screen (23) comprising:

- (a1) a radiation-transparent substrate (11) such as plastic films, glass, or aluminum sheets (column 4, lines 51-61);
 - (a2) a stimuable phosphor layer (12) formed on said substrate (11), wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor (column 6, line 62 to column 7, line 11; column 8, line 52 to column 9, line 18);
 - (a3) a first transparent organic film (13a) covering said stimuable phosphor layer (12); and
 - (a4) a second transparent film (13b) formed on said first transparent organic film (13a), said second transparent film (13b) is a polymeric film (column 9, line 46 to column 11, line 50),
- (b) an imaging device (25, 26) disposed in order to face said stimuable phosphor screen (23).

The screen of Kano *et al.* lacks an explicit description that the polymeric film contains polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers. However, polymers for forming optical quality protective films are well known in the art. For example, Benz *et al.* teach (column 3, lines 12-32) that the polymeric film contains polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers, in order to obtain a protective layer having desired properties such as good abrasion and

scratching resistancy. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known polymer (e.g., silazane, siloxazane, compatible film-forming polymers, or mixtures thereof) for the second transparent film in the screen of Kano *et al.*, in order to obtain a protective layer having desired properties such as good abrasion and scratching resistancy.

11. Claims 2, 6, 10, 14, 18, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) as applied to claim 1 above, and further in view of Arakawa *et al.* (US 4,863,826).

In regard to claim 2 which is dependent on claim 1, while Kano *et al.* also disclose (column 5, lines 4-7) a subbing layer between said substrate and said stimuable phosphor layer, the modified screen of Kano *et al.* lacks an explicit description that the subbing layer comprises a transparent organic film. However, subbing layers are well known in the art. For example, Arakawa *et al.* teach (column 3, line 56 to column 4, line 3) that a subbing layer comprises a polymer material with optional additional light reflecting or light absorbing material, in order to obtain a organic film having desired optical properties which also enhances bonding. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known subbing layer (e.g., a transparent organic film) for the unspecified subbing layer in the modified screen of Kano *et al.*, in order to obtain a layer which enhances bonding.

In regard to claim 6 which is dependent on claim 2, Kano *et al.* is applied as in claim 5 above.

In regard to claim **10** (which is dependent on claim 2) and claim **14** (which is dependent on claim 6), Kano *et al.* is applied as in claim 9 above.

In regard to claim **18** (which is dependent on claim 10) and claim **22** (which is dependent on claim 14), Kano *et al.* is applied as in claim 17 above.

12. Claims 3, 7, 11, 15, 19, 23, 33, 35, 37, 39, 41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) as applied to claim 1 above, and further in view of Homme (US 2003/0160185).

In regard to claim **3** which is dependent on claim 1, while Kano *et al.* also disclose (column 9, line 46 to column 11, line 50) that the first transparent organic film (13a) is a polymeric film, the modified screen of Kano *et al.* lacks an explicit description that the polymeric film comprises a poly-paraxylylene film. However, polymers for protective layers are well known in the art. For example, Homme teaches (paragraph 33) that a protective layer comprises polyparaxylylene. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a known polymer (e.g., polyparaxylylene) for the unspecified polymer of the protective layer in the modified screen of Kano *et al.*

In regard to claim **7** which is dependent on claim 3, Kano *et al.* is applied as in claim 5 above.

In regard to claim **11** (which is dependent on claim 3) and claim **15** (which is dependent on claim 7), Kano *et al.* is applied as in claim 9 above.

In regard to claim **19** (which is dependent on claim 11) and claim **23** (which is dependent on claim 15), Kano *et al.* is applied as in claim 17 above.

In regard to claims **33**, **37**, and **41**, Kano *et al.* disclose (Figs. 1 and 2) a method of preparing a stimuable phosphor screen or panel, said method comprising the steps of:

- (a) forming a stimuable phosphor layer (12) on a radiation-transparent substrate (11);
- (b) forming a first transparent organic film (13a) covering said needle-shaped stimuable phosphor layer;
- (c) forming a second transparent film (13b) formed on said first transparent organic film; and
- (d) forming a third transparent film layer (column 4, lines 1-6), wherein said third transparent film layer is a polymeric film covering said second transparent film layer.

The method of Kano *et al.* lacks an explicit description that the second and third transparent films contains polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers. However, polymers for forming optical quality protective films are well known in the art. For example, Benz *et al.* teach (column 3, lines 12-32) that the polymeric film contains polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming

polymers, in order to obtain a protective layer having desired properties such as good abrasion and scratching resistancy. As another example, Homme teaches (paragraph 33) that a protective layer comprises polyparaxylylene. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide known polymers (e.g., polyparaxylylene, silazane, siloxazane, compatible film-forming polymers, or mixtures thereof) for the protective layer in the method of Kano *et al.*, in order to obtain a protective layer having desired properties such as good abrasion and scratching resistancy.

In regard to claims **35**, **39**, and **43**, Kano *et al.* in view of Benz *et al.* is applied as in claims 33, 37, and 41 above and Homme is applied as in claim 3 above.

13. Claims 4, 8, 12, 16, 20, 24, 36, 40, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) and Arakawa *et al.* (US 4,863,826) as applied to claim 2 above, and further in view of Homme (US 2003/0160185).

In regard to claim **4** which is dependent on claim 2 in so far as understood, Homme is applied as in claim 3 above.

In regard to claim **8** which is dependent on claim 4 in so far as understood, Kano *et al.* is applied as in claim 5 above.

In regard to claim **12** which is dependent on claim 4 in so far as understood, Kano *et al.* is applied as in claim 9 above.

In regard to claim **16** which is dependent on claim 8 in so far as understood, Kano *et al.* is applied as in claim 9 above.

In regard to claim **20** which is dependent on claim 12 in so far as understood, Kano *et al.* is applied as in claim 17 above.

In regard to claim **24** which is dependent on claim 16 in so far as understood, Kano *et al.* is applied as in claim 17 above.

In regard to claims **36**, **40**, and **44** in so far as understood, Kano *et al.* in view of Benz *et al.* is applied as in claims 33, 37, and 41 above and Homme is applied as in claim 3 above.

14. Claims 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) as applied to claims 17 and 21 above, and further in view of Karellas (US 5,864,146).

In regard to claim **25** (which is dependent on claim 17) and claim **29** (which is dependent on claim 21), the modified sensor of Kano *et al.* lacks that that said imaging device is a CCD. Karellas teaches (column 33, lines 9-23) to provide a CCD as the imaging device, in order to obtain more accurate resolution. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a CCD in the modified sensor of Kano *et al.*, in order to obtain more accurate resolution.

15. Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) and Arakawa *et al.* (US 4,863,826) as applied to claims 18 and 22 above, and further in view of Karellas (US 5,864,146).

In regard to claim **26** (which is dependent on claim 18) and claim **30** (which is dependent on claim 22), Karellas is applied as in claim 25 above.

16. Claims 27 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) and Homme (US 2003/0160185) as applied to claims 19 and 23 above, and further in view of Karellas (US 5,864,146).

In regard to claim **27** (which is dependent on claim 19) and claim **31** (which is dependent on claim 23), Karellas is applied as in claim 25 above.

17. Claims 28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873), Arakawa *et al.* (US 4,863,826), and Homme (US 2003/0160185) as applied to claims 20 and 24 above, and further in view of Karellas (US 5,864,146).

In regard to claim **28** which is dependent on claim 20 in so far as understood, Karellas is applied as in claim 25 above.

In regard to claim **32** which is dependent on claim 24 in so far as understood, Karellas is applied as in claim 25 above.

18. Claims 34, 38, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kano *et al.* (US 4,741,993) in view of Benz *et al.* (US 4,830,873) and Arakawa *et al.* (US 4,863,826) as applied to claim 2 above, and further in view of Homme (US 2003/0160185).

In regard to claims **34**, **38**, and **42**, Kano *et al.* in view of Benz *et al.* is applied as in claims 33, 37, and 41 above and Homme is applied as in claim 3 above.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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CONSTANTINE HANNAHER
PRIMARY EXAMINER